THE VETERINARY RECORD

A Weekly Journal for the Profession.

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The Board of Agriculture.

In reply to a Member of Parliament, who had asked for an explanation of the statements made in the Report sent by the Council to the Board, Mr. Herbert Gardner is stated to have made the three following allegations :—

> "There has been no change. All veterinary and scientific matters are dealt with by the veterinary officers as they always have been."
>
> "The veterinary profession occupy exactly the same position as that of the medical profession under the Local Government Board."
>
> "Major Tennant is merely the head of the executive and does not interfere in any way with veterinary proceedings."

To the first statement we reply—The "Veterinary" department has been entirely effaced, and the work is now carried on under an "Animals" department. This is certainly a change, and one that can only be explained on the supposition that the word "animals" was substituted for the word "veterinary" to excuse the pushing into the background of the professional officers. So long as the department was acknowledged as a "veterinary" one it was impossible to decently put at its head a man not a veterinarian. Ever since the cattle-plague days there has been a "Veterinary" department; for many years it had as its "Director" a veterinary surgeon, this was only right, and just to everybody. The name carried with it a direct recognition of the men who formed its sole right to existence. The name was a State recognition of the profession that had stamped out disease and saved millions of money to the stock-owner. To drop the name and to substitute the unmeaning word "Animals" was an insult to the veterinary profession and a blind to the public.

To say that "all veterinary and scientific matters are dealt with by the veterinary officers as they always have been" is merely to quibble over words. It is a *suggestio falsi* which relies upon the drawing of fine distinctions as to what are or what are not "scientific and veterinary matters." Possibly the President of the Board would limit these matters to making post-mortem examinations or diagnosing disease in the living animal. We hold that everything pertaining to outbreaks of disease, to the methods of spread, to the means of suppression are "veterinary" matters. That all these things are only properly understood by veterinarians, and that they only are fully qualified to direct the action of executive officers and inspectors. What has been done in the past is proof of this. What has been done with swine-fever under the Board's present system is also proof of our contention. Success accompanied the work under a veterinary director, failure has attended the work under a lay executive principal.

Until the present year an annual report of the work of the Veterinary Department has been issued by the Director. Most valuable information has been collected and disseminated. Now we have no report except the crude statements of an executive officer.

As to the second statement that "the veterinary profession occupy exactly the same position as that of the medical profession under the Local Government Board." Does Mr. Gardner really mean to say that Mr. Cope has the position and powers possessed by Dr. Thorne-Thorne? or does he merely mean that the term "veterinary officer" resembles exactly the term "medical officer." Even supposing the resemblance to be exact, it is no satisfaction to us that we have been deprived of a name and position we have had for years, to be modelled afresh upon some other government pattern. Our veterinary officers have been denied the promotion and denied the increase of salary they had a right to expect would come to them on Professor Brown's retirement. We assert distinctly that the comparison between the medical profession at the Local Government Board and the veterinary profession at the Board of Agriculture is most inexact, and that only the term "officers" marks any similarity.

The last statement "Major Tennant is merely the head of the executive, and does not interfere in any way with veterinary proceedings" is possibly true. If the veterinary inspectors at ports and the local veterinary surgeons employed at each outbreak of disease are included as "executive" then perhaps the statement is quite true. We believe that at the Local Government Board outbreaks of disease would be investigated by medical men, and that Dr. Thorne-Thorne would direct their work. This is not the course pursued at the Board of Agriculture, who send sailors and soldiers to do this—except when they find they "have no officers available." Only a week or so since a most fatal and virulent outbreak of disease occurred in Leicestershire. The County Council asked for assistance, but the Board replied "there is no officer available to make any enquiry." The fact is since the veterinary staff was reduced from three to two—since the Board was professionally under manned—there is no available officer for investigation purposes.

During the past two years Major Tennant has been to various places to discuss the suppression of disease with local authorities, and his travelling inspectors has been employed to trace the origin and spread of disease. Possibly the Board dare not just now send a lay officer to investigate the anthrax outbreak in Leicestershire, and having only two veterinarians could not spare a professional expert.

INTESTINAL CALCULI, WITH RUPTURE OF THE COLON.

By Richard Voisin, M.R.C.V.S., Jersey.

The subject was a brown van mare, aged 15, due to foal in May. The owner sent for me about noon on the 18th of March last to see her, as she was taken suddenly ill. On arriving at the place I learned that the owner bought her at four years old, and from that time to the present day she had never suffered from any ailment whatever. She was worked up to the Saturday previous, when she did only a light journey. On Sunday she appeared quite well in every respect. On Monday morning she had no appetite, but gave no signs of being in pain; she passed no fæces whatever, and occasionally placed herself in the position to micturate, but passed nothing.

I found the mare looking dull, respiration accelerated, and pulse almost imperceptible. Extremities deathly cold. She kept shifting her weight from one hind limb to another; would give an occasional grunt; breath fœtid; occasional rigors of the muscles of the hind limbs. I ordered warm rugs and bandages, with stimulant medicine, and promised to call again in the evening. When I returned, about 7.30 p.m., I found her very much the same, except that she was continually gnawing her bucket, evidently in great pain. I also learned that she had passed a lot of dark coloured urine soon after I left in the afternoon. On attempting to take her temperature, she hung back on her rope and fell heavily against the wall; the rope was cut allowing her to fall to the ground. She then rose up, came forward at the manger, staggered, and fell heavily. After lying for a few moments, groaning and writhing in agony, and occasionally looking at her flank, violent straining ensued as though she were attempting to foal. This was followed by a short period of silence, with occasional groaning, and finally death.

Post-mortem. On opening the abdomen, a large quantity of blood-stained fluid escaped. On removing the bowels I discovered an extensive rupture of the wall at the terminal portion of the large colon. Just here I found a large irregular calculus completely blocking the passage, and weighing 11lbs. A little anterior to this was another calculus somewhat wedge shaped, and weighing 4lbs.

NOMINATIONS FOR COUNCIL.

	By	
J. W. Axe		F. W. Wragg.
W. Bower		W. Shipley.
E. Beddard		E. Wartnaby.
W. F. Barrett		G. Fleming.
J. R. N. Dewar		J. McFadyean.
W. Hunting		F. Wragg.
C. Hartley		J. Mulvey.
S. Locke		W. Dacre.
J. G. Parr		J. Penberthy.
W. Pritchard		F. W. Wragg.
D. M. Storrar		A. C. Stewart.
W. O. Williams		J. Simpson.

VETERINARY SOCIETIES.

THE CENTRAL VETERINARY MEDICAL SOCIETY.

The usual monthly meeting of this Society was held on Thursday night, the 2nd inst., at the Royal College of Veterinary Surgeons, Red Lion Square, Bloomsbury, Mr. S. Villar, the president, occupying the chair. The other members present were:—Nicholson Almond, Messrs. A. L. Butters, J. K. Bruce, H. W. Caton, Matthew Clarke, T. H. Clapp, H. Edgar, Thos. C. Garry, W. Hunting, J. S. Hurndall, Professor F. Hobday, E. M. Jarvis, Geo. C. Lowe, C. Lowe, Professor Macqueen, Professor McFadyean, F. C. Mahon (hon. sec.), T. H. Manton, Professor J. Penberthy, A. Prudames, R. Porch, F. W. Ridler, A. Rogerson, H. G. Rogers, W. Robertson, G. O. Reddish, J. Rowe, Hugh Singleton, W. E. Taylor, F. W. Walpole, and S. Villar (president); and as visitors: Messrs. H. M. Lenox Coyngham, Captain Leyton Blenkinsop, A.V.D., F. W. Dowell, C. Dimmick, Morgan Evans, W. C. Fisher, Herbert King, W. Reekie, and W. MacDonald.

On the motion of Mr. A. Prudames, seconded by Mr. H. G. Rogers, the minutes of the previous meeting were taken as read and confirmed.

The Hon. Secretary (Mr. F. C. Mahon) read communications from Mr. J. Roalfe Cox and Mr. A. Wheatley expressing regret at their inability to attend.

"GLANDERS."

Resumed Discussion on Professor McFadyean's Address.

Mr. H. Singleton said: As to the precise mode of entry of the glanders bacillus into the horse's system, Professor McFadyean insists on the respiratory organs being the channels of infection. Undoubtedly it is so, and if we examine a normal histology, however elementary, of the lung, we see how adapted it is to the requirements of the bacillus. Taking the alveoli and assuming that they are the final destination of the bacilli, we see there that the bacilli are supplied with everything necessary for their existence, a suitable temperature, food, and moisture, surrounded by a plexus of capillaries, a rich network of lymphatics, the epithelium lining the alveoli is squamous epithelium, so that the bacilli has not even ciliary action to interfere with it. Predilective is the word Professor McFadyean employs, and how expressive the term.

Now let us see what the microscope shows us, and what Professor McFadyean has so clearly demonstrated by means of those beautiful photographs of his sections which he showed us on the screen. I cannot say positively, but it is probable that the very first change takes place in the epithelium of the alveoli, at all events it is reasonable to suppose that the bacillus commences its activities in the sphere of least resistance, I do not think it will be found to be a proliferative process, nor may it be described as catarrhal or croupous. On page 3 of the pamphlet Professor McFadyean states that "the tubercles mark the points of arrest of the bacilli in the lung tissue." A tubercle is a non-vascular structure in the formation of which no epithelial cells take part, and acts as a veritable foreign body; what naturally consists of air vesicles now becomes an airless area, and the æration of the blood is lost in that part. If we now compare these changes with those that occur in pleuro-pneumonia it may help us, and for this purpose I may be allowed to refer to Professor McFadyean's researches in that

disease. Three years ago Professor McFadyean wrote a paper for the Lancashire Association (see *Veterinary Journal* for February, 1892, p. 141) on "Contagious Pleuro Pneumonia," and therein he stated that "probably the initial lesion in pleuro pneumonia is in the connective tissue." He then goes on to say that "while one never finds either croupous or catarrhal lesions in lobules that are surrounded by healthy connective tissue, there is no difficulty in finding lobules that are absolutely or nearly normal although the connective tissue around them already exhibits marked distension of its lymphatic spaces." And further he says "in pleuro-pneumonia the advance of the disease is centripetal." I venture to predict that future researches will show that the direct opposite is the case in glanders, that in glanders the progress of the disease is centrifugal.

We now come to the question of alimentary infection. Professor McFadyean's difficulty in admitting the possible frequency of alimentary infection appears to rest on the absence of glanders lesions from the stomach and intestines. I do not know why we should expect glanders to develope always at the point of entry of the bacillus. Glanders is different to diphtheria, where the bacilli confine themselves to the false membrane of the larynx. Has anyone ever found a glanders lesion in a horse's mouth? the mouth is a more likely place to find a glanders lesion than the stomach or intestines, for although the saliva is supposed to possess germicidal properties, consisting as it does of mucin, ptyalin and salts, the most important salt is potassium sulphocyanide, yet in old horses the mucous membrane of the mouth is corrugated and lacerated so that the bacillus taken into the mouth in food may get into one of these folds, escape the action of the saliva, and be conveyed to distant parts. If glanders matter, such as nasal discharge should reach the stomach by being swallowed in food it is carried on to the intestines where, by peristaltic action it is prevented from remaining sufficiently long on the mucous membrane to cause a distinct lesion, though it may enter the lymphatics of the intestine and thus produce the disease; so that the absence of glanders lesions in the stomach or intestines does not prove the impossibility of alimentary infection.

At the Brown Institution a few years ago Professor Sherrington demonstrated the ability of the glanders bacillus to retain its virulence for a period of eighteen days in ordinary tap water. He also demonstrated that exposure to sunlight destroyed the bacillus in four days; one might have supposed that exposure for four hours would have effected this. According to Straus and Du Barry the glanders bacillus retains its virulence in ordinary potable water sterilised at 20 0 for twenty-eight days, and at 25 0 for fifty days. It is also interesting to note that the same observers found that the pyococci when treated similarly lost their virulence much sooner, which proves, I think, that the glanders bacilli surrounded by matter given off from the diseased animal are not so liable to be destroyed by the accompanying organisms as is commonly supposed. Fraenkel says that the glanders bacilli when dried retain their virulence for three months; but we should require to know how long and at what temperature the drying process is effected.

In mallein there can be little doubt that we possess a valuable diagnostic substance, but I notice that on page 8 Professor McFadyean states "two or three horses though undoubtedly glandered did not react to mallein." Dr. Klein, of Leipzig, in noticing a similar occurrence with the analogous substance tuberculin says that this may be due to the presence of other complicating organisms, that on these, and not on the tubercle bacilli, the tuberculin acts, giving to them an increased potency or fever producing power which is, he says, the cause of the reaction. If this is the case in tuberculosis may not the same be the cause of mallein failing sometimes to react in glanders if it should be unaccompanied by fever producing organisms. In conclusion I should like to thank Prof. McFadyean for the paper he has given us, a paper that will always remain a standard work on the pathology of glanders

Mr. BUTTERS said: The pleasure with which I listened to Professor McFadyean's address was not lessened by my perusal of that address in pamphlet form I think a careful study of the whole pamphlet shows that we have begun a new era in the history of glanders, a history which commenced, perhaps, by the discovery of glanders bacilli by Loeffler and Schutz, but more definitely and decidedly by the subsequent utilisation of that discovery by the preparation known as mallein. The bacilli, of course, prove beyond a doubt the true origin and nature of this disease, and the use of mallein as a diagnostic agent has not only increased and corrected our knowledge but has given us remarkable results which, I think, lead to a very considerable modification of our views—our commonly accepted views, respecting glanders. It has shewn—which was very important—that the presence of glanders tubercle in the lungs is compatible with a high condition and all the appearances of perfect health. This is not a new phase of the disease; this fact has been known and described by more than one observer, but it is a point, as Professor McFadyean said, which has not been emphasised in our text books. This is a point which I consider of far reaching importance. It is important to those who are dealing with the disease in the present day, and it is a point which must be kept fully in view when we are framing measures, legislative or otherwise, for the further suppression of the disease. It has also an important bearing on the past history of glanders because in those experiments which have been tried it introduces an element of doubt, for we have no means of knowing that some of the animals experimented upon were not infected with disease prior to those experiments. I do not wish it to be understood that I undervalue those experiments. I only say it introduces into experiments an element of doubt. Both by accident and by experiment I have had personal experience of the ready way in which the disease enters through any abrasion in the skin. I cannot myself express a definite opinion as to whether the general mode of infection is through the respiratory organs or through the alimentary. Those who adopt the view of the alimentary organs point out the difficulties which the bacillus has to overcome in order to enter the body by ingestion. There are difficulties both ways, and I think the fact that the bacillus does get into the lungs shows us a very good example of perseverance. I might say that I was rather inclined to favour the view of aerial infection. I recollect having some years ago two cases which occurred pretty close together which rather gave me the idea that it was possible for the glanders bacilli to enter by the respiratory tract. One of the horses had apparently an ordinary cold and sore throat. The cases, I should say, occurred in a stable where glanders existed, although it was unknown to exist at the time, that is to say, none of the horses at the time had shown any visible sign of the disease. The horse to which I allude had a sore throat, was feverish and breathed stertorously. This increased so much that in the course of six hours tracheotomy was performed, which afforded relief in the course of two days afterwards. A cord of swollen lymphatics leading from where the tube was inserted in the one; and the larynx of the next revealed the true nature of the disease, and the animal was destroyed; and although no tubercle was found in the lungs, glanders was discovered in the larynx. Another case which I recall gave me the impression of aerial infection. Discovery of glanders in the stable induced in me the belief that it was possible for the disease to enter through the medium of the air. I also recollect hearing Professor Dick, I think in a trial

as to breach of warranty in regard to glanders, before the Sheriff at Edinburgh, state amongst other things to prove that the disease was contagious, that it was also dangerous to human life, and that he knew a case where two men died from glanders in Edinburgh Infirmary who had contracted the disease by sleeping in a loft over a stable in which glandered horses had been kept. Of course, I cannot say how far the disease may also have been communicated in other ways. I know that that was the opinion Professor Dick expressed at the time, and it seems to confirm the idea—which is not a new idea—of ærial infection. I think, too, that the accounts which we read of glanders breaking out among horses kept under hatches during a sea voyage also points in some measure to infection by way of the respiratory tract. Of course, I also believe in infection through the alimentary tract. There is another point Professor McFadyean mentions with regard to the use of mallein. He says he has some ground for believing that repeated doses of mallein produce a beneficial effect. Now I should like to know what the grounds are upon which Professor McFadyean bases that belief. I know from my own experience that if you inject mallein and you get a good reaction and repeat the injection, say in the course of a few weeks, and finding the reaction is less, continue the process at intervals of a fortnight five or six times, you will ultimately find that the animal does not give any reaction at all. And, indeed, in a case which came under my observation of an animal which had a thick leg but no farcy ulcers, after being subjected to repeated injections of mallein seemed to improve in condition. It kept on working, and when it was destroyed glanders tubercles were found in the lungs. The horse, I may say, was isolated, so that there was no chance of knowing whether it infected any other horse. I should like to know from Professor McFadyean whether horses so treated with mallein are considered as cured, or whether the disease is arrested, and whether he recommends after a reaction once or twice to mallein, the horse should be branded or marked. Personally, I consider that mallein, so far as this is concerned, is to a certain extent on its trial. The results which have been produced are remarkable, and satisfactory in some respects, while in others they are not so satisfactory as we could wish. I think that Professor McFadyean has raised our knowledge of glanders to a higher level than it had reached before. He has pointed out ways by which we may overcome some of the difficulties with which we have yet to cope in dealing with this terrible disease, a disease that has cost the lives of millions of horses, and of not a few human beings. For this I think he has earned the thanks not only of this Society but of the profession, and that he deserves, too, the gratitude of horse owners and the public.

Mr. HUNTING: I would ask a question of Mr. Butters. Was there a post-mortem examination in that case of "laryngitic glanders?"

Mr. BUTTERS: I made a post-mortem examination, and I did not discover any nodules in the lungs. Perhaps this might have been my fault, but I found glanders lesions in the larynx and schneiderian membrane. There may have been tubercles there, but I did not discover them.

Mr. H. W. CATON: First I beg to express my thanks for the pleasure I have experienced in hearing Professor McFadyean's paper. In all the cases of glanders I have come across and subjected to mallein, I have always found tubercles on making a post-mortem examination. With regard to the spontaneous origin of glanders I note that Professor Williams in one of his works refers a good deal to strangles developing into glanders. I think it is very probable that an animal suffering from strangles would be a very likely animal to become infected with glanders. I think there is no question that this bacillus is the cause of the mischief. As to propagation of the bacilli in excreta I should not like to form an opinion. The question has been asked: how long will the bacilli retain their virulence. I remember that while I was at College I was taught they could retain their virulence to an almost indefinite period. Professor Macqueen raised the question whether it was desirable to disinfect in the elaborate way we do. Well, of course, that question entirely depends upon the life of the bacillus; to what extent he can retain his vitality. I have had an idea for a long time which may be ridiculous but I have carried it out. It is this: whenever I have come across glanders in a stud I have not been satisfied with merely scrubbing the wall of the stable, but I have burnt them. I have submitted the whole surface to a gas lamp or an ordinary singeing lamp. I have applied this process to the whole surface, to the inside lining of the tiles, and scraping the whole of the walls in any place which could not be reached by whitewash. As to the mode of infection being respiratory or alimentary, my view up to the present has been that of respiratory infection. I may be wrong, but I have found that where animals have stood a long distance apart in a stable, the horses have not been infected. In one part of his paper I think Professor McFadyean was rather contradictory. He says that the poison must be given off through the mucous membrane which a horse blows from his nostril, while in another portion of his essay he says it might be disseminated in the form of powder following dessication. Professor Spooner and Professor Varnell both gave as their opinion that you may give a horse an ounce of glanderous matter through the medium of the alimentary tract and yet not produce disease. Further investigation has proved that to be erroneous. With regard to unhealthy wounds, they offer, of course, a very ready mode of receiving the disease. I could give any number of instances to demonstrate that. I remember one particular case as showing the receptivity of the disease. I think during the last three years I have had from Professor McFadyean 400 doses of mallein, and I am still drawing upon him 10, 20, 50 a week. Of course I do not require all this mallein for my own purposes but have procured it for others. I will read you presently, if time permits, and you do not tire, just a few of the results of 100 animals I have examined. Mr. Caton then related the case of a young horse that was placed with two glandered horses in a stable. He did not like the look of the animal after a while and dosed it with mallein when it failed to respond. But later in the same month he dosed it again when it responded freely and from the nature of the discharge, the enlargement of the lymphatics down to the jaw and expansion of gland, he advised that the horse should be destroyed merely as a test case. The animal was killed and glanders tubercles were found in the lung, there was also ulceration of the membrane and great infiltration. This occurred in a single month. When he dosed the animal first with mallein it did not respond. When he dosed it again it responded freely and was killed. He did not think they could overrate the importance of mallein, the value and efficacy of which he had tested in very many cases. Passing to another subject, he should like to know what were the duties and powers of veterinary inspectors, because in his opinion the manner in which some horses were treated by inspectors partook of the nature of a bit of sharp practice. He would not refer to any inspector personally, but he should like to know how far they could go.

The CHAIRMAN:—I do not think this matter is in order.

Mr. CATON:—Then I will not pursue it. He then went on to describe the efficacy of mallein as he had tested it in practice, and added that he had a list of some 200 cases showing how mallein had acted which he would

show to any members of the Society who might desire to see it, the document being too long to admit of its being read *in extenso* on that occasion.

Mr. HURNDALL—I have no doubt that you will not be surprised to hear from me that I hold rather heterodox, views, views even opposed to those entertained by Professor McFadyean. They are not merely theoretical ideas, but opinions which I have formed from some little practice. Of course, I do not profess to have the experience which Mr. Hunting told us Mr. Sheather, Mr. Woodger, and a few more of the great genii of our profession possess in regard to glanders.

Mr. HUNTING:—I never mentioned Mr. Sheather in any way.

Mr. HURNDALL:—Didn't you? I thought that you proposed him as the opener of this discussion.

Mr. HUNTING:—No, I did not!

Mr. HURNDALL:—I certainly thought that Mr. Hunting held the opinion that certain members of our profession had a much greater knowledge of this disease than others.

Mr. HUNTING:—It was the name of Mr. Shaw that I mentioned.

Mr. HURNDALL:—I know. You mentioned him in your speech, and also one or two others. There is one thing in which I am disposed to agree with Professor McFadyean, and that is as to how this disease is introduced. On this point I may venture, from experience, to differ from my friend, Mr. Hunting, inasmuch as I take it that the great point of dispute between himself and Professor McFadyean is that, whereas Professor McFadyean considers the disease more readily introduced through the respiratory organs, Mr. Hunting thinks it is more readily introduced through the digestive organs. Now, I do not know whether it is a matter of very great importance. It may be, and perhaps it is, in the opinion of some; and if the experience that I am going to ask you to listen to for one or two moments is any use in supporting this point, I shall be very pleased to place it at your disposal. I notice that in his remarks, Mr. Hunting says:—

"Now to refer to Professor McFadyean's paper. The professor says: I do not know on what grounds it is contended that infection usually takes place by the alimentary canal. Now, by parity of reasoning, I may say that I do not know upon what grounds it is contended that infection usually takes place through the respiratory track. There is experimental proof that it takes place from ingestion, there is no experimental proof that it takes place in any other way except by inoculation. The burden of proof lies entirely with those who think it spreads by inhalation; and, as far as I can make out, the only argument in favour of inhalation is the analogy drawn from the spread of tuberculosis and, perhaps, some other diseases."

Then, a little further down, Mr. Hunting says:—

"In many stables there is a water trough interposed between each manger. This is absolutely never dry, nor is the food in the mangers. It is a perfectly well-known fact that even with iron mangers, or undivided mangers, that what with the saliva of the horse and the slopping over of water from these troughs, the manger is never dry; yet the disease spreads there from. I say, the direct contamination of the food and its being swallowed by a horse. I may give an illustration in disproof of the inhalation theory, an instance in which that theory cannot be applied."

Then he proceeds to say what he discovered in a horse suffering from glanders in a "square stable," though I am at a loss to conceive what a "square" stable has got to do with the matter any more than a round stable. I am not going to read any further from Mr. Hunting's speech, but I will just give you the experience I have, and from which I cannot account for a certain number of horses taking glanders except on the inhalation theory. But this is a point on which I am heterodox. I am going to say that the fact of the horses taking glanders in the case to which I refer is to be attributed not to the bacilli but to the product of the bacilli and that it is not necessary for the bacillus to be a living organism at the time the horse inhales it in order to contract the disease. Here is the idea: I do not advance it, mind you, with a view of setting myself or my opinion for one moment against Professor McFadyean. I think it would be the height of presumption on my part to do so. I wish merely to give you my own ideas based on experience, and argued out in my own mind. I cannot account for the experience I had if the theory of Mr. Hunting be correct, that the bacillus cannot exist beyond a certain period. If the bacillus cannot stand the effect of being white washed over with lime for instance, and being enclosed under the lime for a period of six months, I have good reason to believe that there is evidence to prove that he cannot. Mr. Hunting says he cannot, and I do not think Professor McFadyean disputes it, then I say there must be some other reason for the outbreak of the disease as you may gather from my experience which I am about to relate. I was acting for an Omnibus Company some years ago and went to Glasgow, and thence to Paisley. From Paisley I went seven or eight miles and examined 40 horses in the course of two days, starting at 8 am and ceasing at 8 p.m. Now in order to be perfectly sure that there was no occult disease, I examined every one of those horses with a clinical thermometer for about two and a half minutes each, in addition to other modes of examination. I never found that any one of those horses exhibited anything more than a normal temperature of 98½° and not exceeding 99°. There was no exception in any one of those horses, and no suggestion of any disease whatever existing in their constitution. They were removed from this place near Paisley to Glasgow, were put on board the train and brought to Kings s Cross. Several of them were put into a large box capable of holding five or six. I gave instructions that these horses were not to be put to ordinary hard work in London until they had been prepared both by the proper administration of a suitable amount of corn and exercise for three weeks. That was the term I prescribed as being necessary to get them into a fit condition for the work they were required to do. Before those horses had been in that particular box five or six days, and had had merely ordinary exercise, one or two of them showed very suspicious signs which ultimately resulted in the entire lot being condemned by Mr. Shaw as glandered. He was sent for, and he saw them. He will be able to confirm what I am telling you without referring to the company to whom these horses belonged. Every one of these horses was eventually destroyed as being glandered. Now the place in which they were put had been absolutely empty for six months, the walls had been whitewashed. Now, I ask you does the fact of these horses taking glanders suggest to you the idea that they were glandered through the digestive canal? I may tell you that the whitewash was in some places pealing off the walls and, as this was swept away, was glanders here by inhalation or not, or was the bacillus alive or not, or was the origin of the outbreak the consequence of the product which the bacillus left behind him? The place, as I tell you, was absolutely void for six months, you may take my word for it.

Mr. SINGLETON: The bacillus was alive.

Mr. HURNDALL: Well, if you are satisfied about that—

Mr. SINGLETON: The bacillus which is the cause of glanders is alive.

Professor MCFADYEAN: Having regard to the virulence of the bacillus I would suggest that the bacillus should be called "she." (Laughter.)

Mr. HURNDALL: I have no objection to believe that glanders is contracted through the digestive canal if you can fully convince me of it, but in the face of the per-

sonal experience I have related to you, I confess I cannot accept that theory, even though one of the experience of Mr. Hunting comes forward and says it is so. Mind you, I quite admit that he has far more experience in the matter than I have. He has seen many horses which I have brought before him, and he has condemned them. I am telling you my experience in a particular instance, in the case of a lot of horses which were in a perfectly healthy condition, as I believe, which betrayed no indication of glanders, and which yet within six weeks were condemned as glandered.

Professor McFadyean: To give you the opportunity of replying, would you allow me to suggest the possibility that they were glandered and that you did not detect the fact.

Mr. Hurndall: That is tantamount to suggesting that I don't know my business. I went to extra trouble to protect myself against such a charge by testing every horse clinically with the thermometer. How are you going to get over that?

Mr. Hunting: What has that to do with it?

Mr. Hurndall: What has that got to do with it? Did you ever know a horse with glanders where his temperature was not raised? I never have, and I have come across hundreds. I never came across one in which there was not a consistent rise of temperature, not regularly day by day, but one day the temperature is 100° and the next 104°. This is my experience. I bring these matters before you because they are matters of personal experience. Some persons are fond of talking about the difference between practical experience and theoretical argument. I do not put my opinion against Prof. McFadyean, or Mr. Hunting, or any of the other gentlemen who are supposed to have had remarkable experience of glanders. I say that in the case I have instanced the mischief was through inhalation, and was not through the bacillus but the product of the bacillus; and that is where I differ from Prof. McFadyean.

Mr. N. Almond: Having hitherto always regarded Mr. Hurndall as a logical man, his speech to-night has very much surprised me. I am surprised that he should regard 98½ and 99° as a normal temperature of horses, especially in country districts. Those are not the normal temperatures of country horses where I live, and his theory was that because these horses which he examined in a known infected district such as Glasgow—(Question)—exhibited a temperature of 98½ and 99°.

Mr. Hurndall (interposing): It was a place 17 miles from Glasgow.

Mr. Almond: You mentioned Glasgow.

Mr. Hurndall: I went to Glasgow on my way. I had to go there.

Professor Macqueen: I rise to order. I do not think Mr. Almond has any right to call into question the healthiness of any particular neighbourhood.

Mr. Almond: It is not the healthiness of the neighbourhood I call into question but the studs living in the neighbourhood. I believe it is well known that the Glasgow studs are infected with glanders.

Prof. Macqueen: Very few.

Mr. Almond: I take it that the whole argument of Mr. Hurndall is based upon the fact that he found the animals exhibited a normal temperature at the time he examined them with the clinical thermometer. It is well known, I think, to all veterinary surgeons who have examined horses which are the subjects of glanders that they commonly exhibit a normal temperature; and it is only in comparatively rare cases, where the lesions are usually very apparent to casual examination, that we get any very great amount of elevation of temperature. That being so, I think his contention falls to the ground at once, that the inhalation theory is the only sound one. Of course, impressions are of little value in this scientific age, we require demonstrations, not impressions. I am going to tell you, however, what my impressions are with regard to the way in which animals are infected. I had always held, and I think there is very great reason to believe, that the mode of infection is the alimentary canal. It seems to me certainly the easier of the two, and the one in which infection is most likely to take place. Although I believe this to be the common mode of infection, it does not, of course, negative the inhalation theory. It is, of course, very remarkable if the infection takes place by means of the alimentary canal, that no lesion should be traceable as to the mode by which it reaches the lung. For this disease appears to me to be very similar to that of tuberculosis, and it is well known that where infection takes place in that disease by means of the alimentary canal we are able—at all events in recent cases—to trace the lines of infection. And it is somewhat singular that it is not so in the case of glanders. But it is equally singular that the mode of infection, even by means of the inhalation theory is equally absent, it is not easy to trace the mode of infection, because I believe what Professor McFadyean said, that the bronchial glands are usually not infected. I think the other observation made by Mr. Hurndall is a very singular one when we know the evidence that exists as to the influence of the glanders bacillus and other infective organisms. It is most singular to me that Mr. Hurndall should maintain that the cause of the disease must be a product rather than the living organism when it is well known that the organism itself may be obtained, cultivated, and re introduced into other organisms. However he can get away from the logic of such facts as this and pin his faith to the product theory, I cannot understand. We know, of course, that many of the symptoms—especially the febrile symptoms—may be different in many diseases, but are due to the influence of products upon the various tissues of the body. As far, however, as disease itself is concerned, I believe that with very few exceptions—Mr. Hurndall himself being one—we are all convinced that it is due to the glanders bacilli and not to any other cause. If the Chairman will allow, it may be interesting to have a list of the temperatures of glandered horses read out.

Mr. Hurndall: I am much obliged for the suggestion, but I like to rely upon my own experience.

Mr. Walpole: Perhaps Mr. Hurndall will tell us what is the product of the glanders bacillus. I come here for information.

Mr. Hurndall: I give in at once, and say I don't know.

Mr. Walpole: Then how do you assume that infection is due to the product?

Mr. Hurndall: How do you assume that it is due to the bacillus. I ask you that question?

Mr. Walpole:—To answer one question by asking another, certainly does not afford me the information for which I ask.

Mr. W. E. Taylor:—It has been my lot to inject between 400 and 500 horses with mallein, and I do not think myself that we can rely upon temperatures. One horse that I injected with mallein, I remember had a temperature of 105 at the time of the injection. The temperature was taken by Mr. Hunting, and my colleague Mr. Porch, and myself. In another case the temperature was taken by Mr. Hunting and myself, and in the morning, after injection, the temperature went down to 100. I do not know exactly what we can rely upon as far as regards temperature in glandered horses and injections of mallein. I have also found that we have injected horses with mallein and their temperature has gone up and they have reacted locally. We have had them killed and it has been found at the post-mortem examination that they were wholly free from glanders. Lungs have been submitted to Professor McFadyean, and in three cases he has sent a report that the horse was not

glandered. One case happened just recently--a grey mare. I think Professor McFadyean will remember it. He reported that he was unable to cultivate the bacillus of glanders from the animal's lungs but still he is of opinion from microscopic examination that the animal was glandered. I do not see myself how he can form that opinion. Mr. Hunting, Mr. Porch and others present at the post-mortem examination failed to detect that the animal was glandered. Professor McFadyean reports that he cannot cultivate the bacilli and yet he is of opinion that the horse was glandered. I would ask him whether he considers that we ought to rely upon temperature, or simply local reaction before we give an opinion as to whether an animal is glandered or not. And how long should we watch our case before we decide for the local reaction. Sixteen to twenty-four? There are cases in which there has been no reaction for 48 hours and then the horses have reacted very considerably. Before condemning the horse would you simply go upon a rise of temperature or the hours it takes to develope the local reaction? Personally, I believe the local reaction ought to be depended upon to a certain extent. If you get a horse to react locally and does not evince any pain, I do not think the animal is glandered. If you get a horse to react locally and you find it is very tender and lame, off his food, and altogether amiss, then I think the animal is glandered.

Reply.

Prof. M'Fadyean:—Mr. President and Gentlemen, I am very sorry, for a double reason, that the discussion has come to an end, the first being that the whole of it up to the very last has been to me profoundly interesting, a greater part of it most instructive; and in the second place, because now that it is finished, it is my duty to say something. I find myself in a great difficulty with regard to my reply, and that is how I should satisfy the various speakers in relation to many interesting points upon which they have asked questions, without at the same time boring the members of the Society. I think everybody will agree that, if I were to attempt to answer or deal with the numerous points which have been raised in the discussion, I should occupy a perfectly inordinate time. I hope, therefore, that the members will allow me to attempt to reply not by dealing with the questions individually but by grouping them together as much as possible. I shall not undertake to deal with all the points in the order in which they were raised, and indeed if you will allow me, I shall begin by replying to observations which have just fallen from Mr. Taylor, as I have not taken notes of what he said but the points are still fresh in my recollection. Mr. Taylor said, I think, that I have been consulted in regard to three animals that had reacted to mallein, at the post-mortem examination of which animals no distinct glanders lesions were discovered; and that I had reported, as the result of my own examination of the parts sent to me, that the animals were not glandered. Well, I need hardly say that I did not make any such report. I should not be guilty of such a monstrous blunder as to warrant a horse free from glanders because I failed to find glanders lesions in the lungs sent to me—supposing the whole lung was sent to me. What I did report with reference to one or two cases was that I failed to prove that these were cases of glanders experimentally, or that I had failed to find lesions that could be regarded as indubitable evidence of glanders. Speaking from the evidence I had I think I am right in saying that that did not occur in as many as three cases; and I do not think from the series to which Mr. Taylor has referred there has yet been sent to me three sets of lungs that were free from lesions of a doubtful nature. But I may say, even supposing I made the post-mortem examination myself and spent half a day over it and had failed to find a distinct or indubitable lesion of glanders, I should not by any means feel myself bound to declare that horse free from glanders. I cannot assert with reference to my own post mortem examinations that they are ever so complete as to warrant me in saying that I cannot have overlooked a lesion. So that when, say, in 1 per cent. of horses that have reacted to mallein—I do not discover lesions of glanders, that is nasal ulceration or tubercles in the lungs, or bacilli—it does not in the least degree upset my faith in mallein. But my faith in mallein will be upset when anybody produces evidence of this nature. If he will test 10, or 20, or 50 horses placed in circumstances that warrant him in saying that they cannot have been exposed to the infection of glanders (in some remote district in Scotland say) and he finds that some of these horses react and are killed and yet they show perfectly healthy organs. Then I will begin to think that mallein sometimes excites a reaction in horses that are not glandered. In the meantime, while I admit that there may be instances in which the post-mortem fails to bring to light glandered lesions in horses that have reacted, I am inclined to think that mallein never does provoke a reaction except when a horse is glandered. That is the result of my own experience. Then, dealing with things in inverse order, since I began with what Mr. Taylor said, I might make a brief reference to remarks which have fallen from Mr. Hurndall. Of course, as Mr. Hurndall indicated very clearly, he holds views which are opposed to those I expressed in my paper regarding the causation of glanders; but I am rather inclined to think that in this instance he will constitute a minority of one. I doubt whether there is any other person in this society who believes that the products of glanders bacilli are by themselves capable of setting up an attack of glanders. Of course if I left the matter there Mr. Hurndall might say, after all, that he is right although all the other members of the society hold an opposite opinion. In reply to a question put to him as to why he thought the products of the bacilli were the causes of the disease, he adopted the Scotch method of answering the question by putting another, and asking what evidence there was that the bacillus was the cause of the disease. I think I can answer that. I will undertake—the experiment to be superintended by any committee Mr. Hurndall likes to name—to give glanders to as many horses as he likes to bring before me, with the bacillus freed from its products by washing. Then, I was not convinced from the case which Mr. Hurndall instanced, that those horses were not the subject of glanders when and where they were bought; and I thought he displayed quite unnecessary heat when I hinted that that might be the explanation of the circumstances. Personally, I do not feel insulted if any man suggests that I cannot diagnose glanders without the test of mallein. If he suggests that and cannot diagnose it by the aid of the thermometer, it is not unlikely that I should form a rather low estimate his knowledge if I gathered from his conversation that he credited me with power of diagnosing glanders by the use of the thermometer. And, certainly, Mr. Hurndall's experience seems to have been unique in quite a different direction, and especially in the possession of a thermometer which shows the normal temperature of a horse as under 99°. Well, I should not like to say again that Mr. Hurndall may not be right, but at any rate at the Royal Veterinary College by use of the thermometer we are supplied with, it is rarely we find in a horse a temperature of 98½°; in fact over 100° is the normal temperature. Of course that may be the explanation of Mr. Hurndall's experience; that he has found the temperature elevated in glandered horses. Now, if I attempt to deal with other points that were raised—grouping them together.

I think I might deal in the first place with the opinions that were expressed—some of them in dissent from what

I said—regarding the occurrence of the glanders bacillus in the body. I said, I think, in my paper, that it was a tissue parasite found in the lesions and only exceptionally found in the blood. I certainly did not say that it was never found in the blood. I believe that it is occasionally carried by the blood stream. I believe that it never propagates by the blood stream, and that dealing with the cases of glanders we have got before us now (that is excluding the cases of horses occasionally dying from glanders), then I say the blood is rarely infective. That opinion is based both upon the distribution of lesions and on other evidence. For example, I think the escape of knackers in London—men whose hands and arms are daily bathed in glanders blood—I think their escape is quite inconsistent with the view that the blood is really infective in glanders. Then I have myself, in making some experiments during the past session with the blood from glandered horses, attempted to infect guinea pigs. The number of experiments made is not yet large, but none of them have been positive. As regards the vitality of the virus, I think I have been mildly reproached with not saying anything, in fact, as to the vitality of the virus and mode of infection. I admit that, perhaps, I am open to that reproach but it was not an accidental omission. My paper lasted far too long I thought, and I had to cut that portion out. Perhaps it would have been better if I had left out some other things that are of less practical importance, for I own this is a point of great practical importance. I think we are justified in believing that glanders bacillus is easily killed. I think I indicated as much as that, and that belief could be supported by the citation of quite a considerable number of experiments. I have made a few remarks which I shall not attempt to give here in detail, but I may say that I have found complete dessication of material containing glanders bacilli effected by placing a glass rod moistened with the same in the sun in a few hours. I have found that it will absolutely destroy all bacilli in 24 hours in a temperature of 100°. I have also found that exposure not to direct sunlight but to daylight in the window will destroy the vitality of glanders bacilli in less than 48 hours, while exposure to direct sunlight will destroy them in a few hours. I think these are all points of great interest and profound practical importance, as showing that nature has provided us in great abundance with a valuable disinfectant in the shape of light. And I believe myself that however much a stable is contaminated, if the contamination be all on the surface, after sunlight has been let fully into the stable in the course of one day, there would be no danger in introducing fresh horses. Professor Macqueen asked as bearing upon this, whether I thought an elaborate amount of disinfection was necessary. Well, I should probably be inclined to ask what is meant by an elaborate amount of disinfection." I do not think we carry out a very elaborate disinfection at the Veterinary College. We attempt to carry out through cleansing, and I think that is always three-fourths of disinfection. And I do think that it is wise after that to apply some disinfectant to all the parts with which bacilli are apt to have been in contact, such as the manger, the woodwork, and the walls to a height of 6ft. from the floor. Then Professor Macqueen also said he would like to know what was the radius of infection. I am not quite sure whether he did not ask what was the limit of it in feet—perhaps inches, I think I suggested myself. Well, I should like to know that also, but I do not think it is capable of being settled by experiment. Professor Macqueen's question reminded me of a story which I heard very long ago of a gentleman who, in choosing a coachman, wanted to know how near he could drive to the edge of a precipice. If it could be shewn that the virus did not infect in ordinary circumstances at a distance of 12 feet, I am quite sure that Professor Macqueen is not the man to suggest to the horseowner that it would be advisable to keep the horse at a distance of 13ft. In fact as one speaker said, he would be inclined to keep the uninfected horses as far apart from the infected as circumstances would permit. But I really cannot define the radius of infection. Of course it must vary immensely according to circumstances.

Then I come to the point as to which there was the greatest diversity of opinion, namely the mode of infection; and I think I am almost justified in complaining that I have been to a slight extent misrepresented, or that what I said has been misapprehended. I certainly did not assert that I disbelieved in alimentary infection. I believe in alimentary infection. It has been settled by experiment that horses can be infected in that way, and I know there is discoverable now and again at the post mortem examination of nasal cases, evidence strongly supporting the view that these horses were infected by the alimentary canal, or at least in conformity with that view. I, therefore, do not at all deny the possibility of alimentary infection. I am prepared to admit that a number of horses are infected in that way. On the other hand, I said that I thought the common method of infection was by way of the respiratory tract, and I was rather surprised when Mr. Hunting said that he was justified in saying (even after I had explained my views on the subject), that he did not know why anybody doubted the evidence of alimentary infection. Well, I had tried to explain, in my essay why I thought that was not a common method of infection, and if you will permit me I will very briefly indicate again what are my difficulties. The first of these is the route of glanders lesions in abdominal viscera. Now I never said that one ought to expect in every cases of alimentary infection, to find lesions in either the stomach or intestine. We know that in cases of tuberculosis undoubtedly due to alimentary infection, the intestine is sometimes quite free from any lesion, and the stomach is usually free from any lesion, but on the other hand I should have expected that if a common method of infection was by way of the alimentary canal, we should frequently at post mortem examinations encounter lesions, say in the mesentery or mesenteric glands. And if anybody wishes to dispose of that as an argument valid in this connection, I will invite him to show me a case in which he can infect a horse by subcutaneous inoculation without setting up a lesion in the group of lymphatic glands which intervene between the point of inoculation and the thoracic duct. For example, I think we are all prepared to admit that when a horse gets a lesion in the mucous membrane of the nose he promptly gets a lesion in the submaxillary glands because the lymphatics passing from the nose are apt to carry away the bacilli and rest in the gland, or if the horse has got farcy lesions about the hind leg, then I think it will be found that the inguinal lymphatic glands are affected.

I agree with Mr. Hunting in saying that glanders tubercles are very rare in the liver, and that glanders tubercles in the spleen are distinctly rare. In not one glanders case in a hundred are they found in the spleen. I have not yet seen a case in which there was distinct lesion of the mesenteric glands. That is one of my difficulties in the way of believing that the common method of infection is by way of the alimentary canal. But it is not the only one. I take it that those who believe that alimentary infection is the rule figure to themselves an invasion of the body occuring somewhat in this way; the food or the water a horse takes contains glanders bacilli, they pass through the stomach and enter the intestine; in the intestinal wall possibly they penetrate a blood vessel, and then the blood current carries them to the lung, or if they keep on in the lymph circulation, they are carried up from there into the thoracic duct, and then passed into the blood stream and go to the lung in any case.

Now, if that were the case, one would expect to find lesions of glanders uniformly through both lungs. That is so in the case of tubercles which are produced in this way. The tubercle baccilli carried into the blood stream set up a development of tubercles in the lungs which, as a rule, are present in both lungs, and pretty uniformly in both lungs, and nearly always obviously of the same age. That is not true of glanders. Glanders lesions are certainly sometimes confined to one lung and are then not so unequally distributed as when they are present in both lungs. I think Mr. Hunting himself admitted that they are generally obviously of different ages. If that is so is it to be supposed that the horse is almost every day or half a dozen times ingesting bacilli, and that they are in this way penetrating into the lung. What, I think, would better explain what we actually find, would be the supposition that the bacilli are inhaled once. Let us say they are carried in with the air and reach the lungs, and there they set up glanders tubercle whence the bacilli escape by way of the bronchi. That, I showed by photograph, was extremely probable. The bacilli are coughed up to be thereupon passed into the higher bronchi and may be drawn back to the outward part of the lung and set up another tubercle. Once a tubercle is freed it may be carried from one part to the other by way of the lymphatics. Then, against infection by the respiratory tract the following reasons were urged. It was said that dessication kills the bacilli. Well, I admit that complete dessication kills the bacilli. I have often said that they can be killed by dessication after 24 hours drying in an incubator at about the body temperature. Other speakers —particularly Mr. Dollar—seem to think that dessication to such a degree as to enable the glanders matter to raise a powder, would require a period of eight days or something like that. Well, this afternoon I spread some mucus—some nasal discharge from a horse, on these two pieces of glass, and can certify that they have not since been exposed to a higher temperature than the temperature of this room, from mid-afternoon to half past six in the laboratory, the temperature of which was 58. When I left them they were perfectly dry and when I took a needle I could write upon them. I ask what became of the material displaced where I left a mark. Well, it clearly went into powder. If anyone cares to repeat the experiment and will apply the point of his pen knife he will see that he can powder it now. It has only been dried six hours. There is no danger in doing this because it was not from a case of glanders. Then Mr. Dollar also developed what was either a quite new or a very old theory of the turbinated bones. I really do not remember to have read anywhere recently of the turbinated bones acting as complete filters of the air, and I was rather surprised that Mr. Dollar should have hinted that there was a serious obstacle to the penetration of minute particles into the air vesicles of the lungs. If anyone entertains such opinions I think I can easily convert him, for from the lung of a horse or dog particles much larger than glanders bacilli are daily drawn back into the air vesicles of the organs. There is not a dog two years old in London whose lung is not visibly augmented with inhaled particles that have passed the turbinated bone and been drawn right away in, surely glanders bacilli can also. I do not agree with Mr. Dollar that it is a fact that such inhaled particles have an unequal distribution in the lung. If you examine a dog's lung you will find throughout it inhaled particles. Then it was said that clinical evidence was sufficient to prove that the common method of infection was by the alimentary canal, and I listened with lively interest to Mr. Hunting when he began to cite the history of a case that would prove infection by way of the alimentary canal and negative the possibility of infection by way of the respiratory tract. I was much disappointed when he completed his citation of the case, because he said that infection in this particular instance took place by way of the nosebag. Well, surely if a horse gets infected by using a nose bag, it would be quite possible that the infection was by inhalation of dry discharge of the nosebag. Hence I think clinical evidence is not by itself sufficient to prove that alimentary infection is the common method of infection, and some diversity of opinion that has been expressed by practitioners of great experience here this evening indicates that the clinical evidence by itself is not sufficient to settle the question. Perhaps this subject has been dwelt upon at unnecessary length, because I doubt whether any practical man who believes that alimentary infection is the common one, would not hesitate before he advised his clients that they might disregard the possibility of infection by any other mode. I think it is better to continue to believe that it is possible for a horse to be infected by way of the respiratory tract as well as by way of the alimentary canal. (Hear, hear). Then, lastly, there was the question of curability. I am afraid that time will not permit me to go into that. As to the question of suppression, I think I was taken most severely to task with reference to that matter, by Mr. Hunting. He thought I had been unnecessarily hard upon the horse owner because I said that, if in future glanders continued to exist in a stud, it would be the fault of the owner. He did not quite show in what way I had been harsh in that statement. I repeat that it is the misfortune often and not the fault of the owner when he gets glanders in his stud, but I think in view of the admitted fact that we now know a method of picking out the glandered horses, whether they show clinical evidence or not, I think that in view of that fact we are entitled to say that it will be the fault of the owner if he continues to have glanders in his stud; because I believe that if the owner would follow the advice which is now given by some members of the profession that the horses should all be tested by mallein, and that those that react should be isolated and watched until they die or develope symptoms of glanders, then I believe by that comparatively inexpensive method, glanders can be weeded out of a stud. Hence, I think I am justified in saying that if in future glanders continues to exist it will be because the owner does not make an effort, or a proper effort, to get rid of it. Then Mr. Hunting does not agree with my reference to the question of compensation. He thinks that until some more liberal compensation is given owners will not report freely. (Mr. Hunting: Hear, hear.) That implies that the obstacle to the extermination of glanders at the present time is non-reporting. I contend that that is not the obstacle to the extermination of glanders. What is the use of talking about a few cases here and there where glanders exists in a small stable and is not reported, when we know that nearly all the large studs in London have got glanders, and the law permits the owners to sell any animals they like out of those studs so long as the horses show no clinical manifestation of glanders. I say that is the reason why we are not getting rid of glanders. Whenever either the large or small companies desire to get rid of glanders, I repeat that they can do it; and Mr. Hunting misapprehended me again when he supposed that I had advised that where there is a reaction to mallein, the horse should be killed. I did not advise that; I advised the opposite. The Board of Agriculture has at times gone out of its way to say that they do not regard reaction to mallein as sufficient evidence upon which to destroy a horse. Very well, then, the advice which I should give to the owner of a horse that appeared to be healthy but reacted to mallein, would be that he should treat it as regarded the outside public as if it had not reacted to mallein, that is to say work it every day as you would if it were healthy, but at home treat it as if it had been proved to be glandered. I dare say there are many points raised in the course of the discussion to

which I have not replied, but I must seek to excuse myself on the ground of the unreasonable time I occupied in the first instance, and the fact that I have already spoken half-an-hour in this reply. Before I sit down I should like publicly, if you will allow me, to congratulate myself on the choice of glanders as a subject upon which to address you. (Hear, hear.) I was anxious to select a subject that was of practical importance and which would prove interesting to the majority of the members of the Society, and I think I am warranted in believing that I have been successful in my choice. (Applause.)

Mr. H. EDGAR: I have very much pleasure in proposing a hearty vote of thanks to Professor McFadyean for the valuable paper he has given us.

Mr. CATON: I have much pleasure in seconding the motion.

The CHAIRMAN: I am sure that the motion will be carried by acclamation, but as a matter of form I will put it to the meeting.

The motion was then put, and passed with acclamation.

The CHAIRMAN (to Prof McFadyean): Allow me, sir, to convey to you the thanks of this meeting for your interesting address on glanders.

NOMINATION.

The CHAIRMAN announced that Vet.-Capt. Blenkinsop, A.V.D., had been nominated for election as a Fellow of that Society by himself (Mr. Villar) and by Mr. F. C. Mahon.

THE JUNE MEETING.

The CHAIRMAN: I have also to inform you that our next meeting, namely that on the first Thursday in June, will be an open night; and I have to ask you that if any of you have any very interesting cases or morbid specimens to bring forward you will do so on that occasion. I would ask also that you will communicate with the hon. secretary in order that he may make a list enabling me to call upon gentlemen in rotation. Gentlemen, I thank you for your attendance this evening.

On the motion of Mr. A. Prudames, seconded by Mr. Hurndall, a vote of thanks was accorded the Chairman, with which the proceedings ended.

FORMATION OF A VETERINARY SOCIETY IN NEW SOUTH WALES.

SIR,

Knowing the interest you take in the progress of the profession, I am taking the liberty of sending you particulars of the formation of the first Veterinary Medical Association in this colony. Hitherto the profession in this city has been in an unsatisfactory condition, the several members being unknown to each other and consequently not living in conformity with our motto; but I am happy in saying that, even after the few months of life of the new society, matters have improved wonderfully, and success and prosperity promise to follow its existence. What really brought about its formation was the threatened action of a state aided department, which proposed to provide a free clinique for the benefit of a few amateur students. A meeting was called to send in a joint letter against it; this was done, and resulted in the proposal being abandoned. This meeting was so successful that a preliminary meeting was called to consider the advisability of forming a society, and with what result the enclosed will tell. If you care to have for *The Record* a quarterly report of our proceedings, I will be only too happy to forward same regularly.—I am, dear sir, yours truly,

A. P. GRIBBEN, *Hon. Sec.*,
V.M.A. of N.S.W.

20 Elizabeth Street, Sydney, N.S.W.
March 27th, 1895.

NEW SOUTH WALES VETERINARY MEDICAL ASSOCIATION.

A meeting of veterinary surgeons was held on Monday, October 22nd, 1894, when the following gentlemen were present: Messrs. E. Stanley, S. P. D. Symons, John Stewart, F. W. Melhuish, W. C. Quinnell, T. Green, J. D. Stewart, Guthrie, and A. P. Gribben. Mr. J. Stewart was elected to the chair. Mr. Gribben was elected secretary *pro. tem.*

On the motion of Mr. Symons, seconded by Mr. Melhuish, it was unanimously resolved "That an Association be formed with the title of 'The Veterinary Medical Association of New South Wales.'" Rules were then drafted and referred to a Committee, consisting of Messrs. Green, J. D. Stewart and Gibben, for revision prior to submitting same for confirmation at the first meeting to be held on Monday, Nov. 12th, 1894.

ROLL OF MEMBERS.

Edward Stanley, F.R.C.V.S.	S. T. D. Symons, M.R.C.V.S.
F. W. Melhuish, M.R.C.V.S.	A. E. G. Robinson, M.R.C.V.S.
Jno. Stewart, V.S. (H. & A.S.)	Jas. D. Stewart, M.R.C.V.S.
S. C. Pottie, M.R.C.V.S.	John Pottie, V.S. (H. & A.S.)
T. Green, M.R.C.V.S.	A. P. Gribben, M.R.C.V.S.

W. C. Quinnel, M.R.C.V.S.

First monthly meeting, held on Nov. 12th, 1894. Mr. John Stewart, V.S., in the chair; there were also present Messrs. E. Stanley, F.R.C.V.S., T. Green, W. C. Quinnell, J. D. Stewart, and M. P. Gribben, M.R.C.V.S.

Rules were adopted. Election of office bearers resulted as follows:—

President: Mr. John Stewart, V.S.
Vice President: Mr. Edward Stanley, F.R.C.V.S.
Hon. Sec. & Treasurer: A. P. Gribben, M.R.C.V.S.

Second monthly meeting held on December 10th, 1894. President in the chair. Present: Messrs. E. Stanley, J. D. Stewart, T. Green, A. E. G. Robinson, Fenner, and the Secretary.

Mr. Stanley exhibited specimens of bovine melanotic cancers taken from cattle condemned at sale yards. Mr. J. D. Stewart exhibited (1) portion of reticulum of cow shewing numerous "amphistoma conicum" attached to mucous membrane; (2) portion of bowel of dog, shewing intussusception at ileo-cæcal valve, with tapeworms (tænia marginata).

INAUGURAL ADDRESS.

By J. STEWART, President.

Gentlemen,—It having fallen to my lot to have the honour conferred on me of being elected president of this, I believe to be, the first formed veterinary medical association in New South Wales, I desire to express to one and all my grateful thanks for this expression of their kindly feelings and respect. At the same time I feel constrained to confess that I fall short in the many gifts, attainments, and graces—even when measured by my own standard—of what I conceive a president of such an association should be. But it appears to me to be the general way of things and events in this world that great works, scientific knowledge, and patriotic reform oft-times spring from very humble and modest beginnings; and that it is the small things that build up and dominate the large, and this seems to me to be in conformity with the laws of nature, in the building up of the ascent of man, and, with man, a higher development and usefulness, both in the animal and vegetable kingdoms.

Some thirty years ago, or may be more, the veterinary surgeons in New South Wales found themselves in a

very grave and depressing position, being neglected and ignored not only by the owners and breeders of domesticated animals but also by the Government, and the Courts of Law and Justice. They were also surrounded in every district by the so-called farrier or horse-doctor, terms which were used synonymously, a class of men who sprang from horse-shoers, little farmers, stockmen, stallion leaders and butchers, men who had no education or special training to enable them to practise the veterinary art, and but few of them had ever accomplished the feat of mastering the three R's. They were very glib of tongue, possessed little or no conscience, were very assertive, large in promises and very positive as to the nature of the disease and what would cure it. Verily, they did all the doctoring and gave abundance of advice gratis.

During these trying times the veterinary surgeon was often placed in extremely trying and straightened circumstances, verging on despair and abandonment of his profession: but the love of the profession, with the strong and imperishable conviction in their souls, that they had knowledge and power within themselves, and justice on their side fortified and strengthened them to go onward and forward so that by their abilities, truthfulness, and rectitude of character, and earnest, honourable lives, the veterinary surgeon has now become valuable, sought after, and respected. So now we find him associated with the medical profession in the Boards of Health and Sanitation, holding very responsible Government positions, and his evidence in courts of law commands great respect and value.

All this has been accomplished by the veterinary surgeons working silently and individually, after many years of labour and hardship, during which not a few good men succumbed and the world knew them no more. But a new, a stronger and a brighter life is dawning on veterinary surgeons in New South Wales. We have formed ourselves into an Association for the elevation and advancement of the profession by educating the public into the benefits that are to be derived by calling into their service the especially educated and trained abilities of the veterinary surgeon, who will, as he ever has, place it beyond all doubt that he is the most capable and profitable person to administer to the needs and wants of our domesticated animals when in pain or sickness, and that it would be greatly to our advantage and profit of owners and breeders to consult him as to the care and management of their stock, and as to the sanitation of their establishments.

In this way we may fairly anticipate that the care and management of our domesticated animals would be greatly improved and elevated, thereby bringing about a mutual benefit as between owners of stock and veterinary surgeons, while at the same time our national wealth would be largely conserved and increased. Now, if in the past veterinary surgeons have advanced and accomplished so much under adverse surroundings, surely it is most reasonable to anticipate that, having formed themselves into an Association and become one solid cohesive body pledging themselves, with all their individual might and main, to elevate and advance the veterinary profession, to discuss the principles and practice of the veterinary art and veterinary scientific subjects, a new and hopeful future should be in store for the veterinary art in New South Wales, and one which should make its mark felt for good in the sphere of the afflicted and suffering animals.

I am sure that every member of this Association acutely feels the grave and responsible position. To enlighten and educate the public is a long, a trying, and a never ending work, beset with many difficulties and disappointments; but in the end the love of our noble profession, with the heartfelt desire to relieve pain and suffering, will more than conquer all, and lead us into a haven of peace and rest with the soul rejoicing, knowing that we have honestly striven to lessen pain and save life, and to benefit the world in our day—a reward which will not depart from us when sickness or age has blunted the senses, and the body has lost its capacity to enjoy life, but will abide with us until the very end of life and go with us into the great unknown.

Without doubt the members of this Association will now, both individually and collectively, come more under the observing eye of the public, and of kindred associations than ever before, and will be subjected to a larger amount of criticism, which will be most heartily welcomed if it is honest, fearless and intelligent; for we concede that such criticism is the builder up and purifier of all great nations, works, deeds, and aspirations, and in the absence of which many people and nations have been left in, or have fallen into ignorance, superstition and slavery.

As to our own internal economy, I suppose it is in conformity with the constitution of mankind that there should be difference and divergence of opinions amongst us, and how can it be otherwise, when other eyes give different impressions to other brains, and the tendency to extremes is very great, and hardly to be avoided on all occasions even by the best trained and most cultured intellects. Yet that and all other difficulties and obstacles which may beset our path will be overcome if we approach our work in the spirit of true brotherhood, and have nothing else in view but the desire to advance the veterinary profession, and to do good in our day and generation. In conclusion I would, in the name of this Association, most earnestly plead with such of our professional brothers as have not yet joined, to do so without further delay, so that they may help and strengthen us in the great and noble work we have set our hearts and hands to perform.

Third monthly meeting held on January 14th, 1895. Three associates and one member nominated. Formal business transacted.

Fourth monthly meeting held on February 11th, 1895. President in the chair. Present, Messrs. W. C. Quinnell, F. W. Melhuish, A. E. G. Robinson, T. Green, J. D. Stewart, and the Secretary. One associate nominated, 3 associates elected, and 1 member elected.

Moved by Mr. E. Stanley, seconded by Mr. J. D. Stewart "That a letter of condolence and sympathy be sent to the bereaved widow and family of the late Professor Walley."

Mr. ROBINSON opened a discussion on "The Present Position of Veterinary Science in the Colonies" He specially dealt with the desirability of taking steps to obtain an Act of Parliament to protect the qualified practitioner, mentioning several cases of quacks openly using "M.R.C.V.S." Reference was also made to the movement, in England, to ensure protection to the qualified man abroad, the general opinion being that, as far as this colony is concerned, the only action promising any benefit would be to bring the matter before the Agent-General, who in his turn would submit a report to his home Government.

After a general discussion a committee consisting of Messrs. J. Stewart, E. Stanley, W. C. Quinnell, and A. P. Gribben, was appointed to enquire into the matter of obtaining an Act of Parliament.

Fifth monthly meeting held on March 11th, 1895, the President in the chair. Present, Messrs. Stanley, Quinnell, F. W. Melhuish, T. Green, J. D. Stewart, F. C. Stewart, J. M. Stewart, and the Secretary.

Mr. C. J. Vyner, M.R.C.V.S. was nominated as a member. One associate elected.

Mr. Stanley exhibited the following morbid specimens:

(*a*) Large hydatid cyst in the left ventricle of a pig's heart, shewing atrophy of wall.
(*b*) Tubercles in kidney of ox.
(*c*) Hair balls from stomach of pigs.

Mr. J. D. Stewart read a paper on "Mechanical Lameness, its Diagnosis," discussion adjourned till next meeting.

ELECTION ADDRESSES.

To the Fellows and Members of
The Royal College of Veterinary Surgeons.

GENTLEMEN,

By rotation I retire from the Council of the Royal College of Veterinary Surgeons, and beg to offer myself for re-election. During the time that I have occupied a seat on the Council I have endeavoured faithfully to discharge the duties of one of your representatives.

I supported and very cordially approve of the educational reforms that have been carried out during the time I have held office, and should you favour me by again returning me to the Council it will be my endeavour to promote by every means in my power the best interests of the profession.

Yours faithfully,
CHARLES HARTLEY.

43, Friars Lane, Lincoln,
May 16th, 1895.

To the Members of
The Royal College of Veterinary Surgeons.

GENTLEMEN,

Although only elected a Member of Council last year I am again obliged, by the fortune of the ballot box, to offer myself for your approval.

The work of the past year you are all acquainted with, and I have borne my share. In all matters affecting the interests of the profession I shall vote in favour of progress, but I venture to submit that we have now arrived at a time when it is necessary to wait and consolidate our new position.

Should you again return me to the Council I shall continue to support all the changes introduced during the last five years.

I am, gentlemen,
Your obedient servant,
WILLIAM HUNTING.

To the Fellows and Members of
The Royal College of Veterinary Surgeons.

GENTLEMEN,

The Eastern Counties Veterinary Medical Society has again conferred upon me the honour of nomination as a candidate for a seat on the Council. Should the profession elect me, I will do my best to further all measures calculated to benefit our corporate body.

The attitude of the Board of Agriculture towards the profession is one matter now engaging the attention of Council. I do not think we have been fairly treated, and I shall join in combined and continued action to bring about a return to the arrangements under which only veterinary surgeons did veterinary work.

I am pleased to know that men of higher educational attainments are now entering the profession, but I am afraid that the "university education" advocated by some would lead only to disappointment. The earnings of the average practitioner would be but a small return for the time and money such education would require.

In addition to a good liberal education at school, I am in favour of pupilage with a practitioner of experience—who has work to do and will see that it is done—as the best way to make really good practitioners.

I hope that for England, Scotland and Ireland there may always be but one diploma-granting body; and that the time will soon be reached when examiners of veterinary students shall be chosen only from amongst veterinary surgeons.

Yours faithfully,
WM. BOWER.

East Rudham, Norfolk.

PARLIAMENTARY.

THE PROPOSED VETERINARY COLLEGE IN DUBLIN.

In the House of Commons on Friday, May 10th,

Mr. FIELD asked the Chief Secretary to the Lord Lieutenant of Ireland whether he could state when the Bill to provide the promised £15,000 for the Veterinary College in Dublin would be brought in; and whether the Government had under consideration the establishment of a Board of Agriculture for Ireland.

Mr. J. MORLEY:—I hope to be in a position to introduce the Bill referred to at an early date. As regards the second paragraph I have nothing to add to the views I have already on various occasions expressed on the subject. I would it were otherwise.

Personal.

Mr. J. D. BARFORD, Above Bar, Southampton, after being in active practice for over 40 years, acting under Medical advice, has retired from the profession. From the 25th of March last the practice has been transferred to his son, Mr. John William Barford, who has assisted him for over 13 years and who will continue to practice at the same address, and under the same style as heretofore.

ARMY VETERINARY DEPARTMENT.

WAR OFFICE, May 14th.

The following Veterinary-Lieutenants to be Veterinary-Captains:—D. J. Barry, J. G. O'Donel, A. E. Richardson, W. R. Walker.

EXAMINATION FEES.

DEAR SIR,

Mr. Rutherford begs to present his compliments to "Wellwisher" whose letter appeared in your issue of last week, and to say that if "Wellwisher" under his own signature, will communicate direct with Mr. Rutherford the subject matter of his letter will receive every attention.